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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/055,098

01/22/2002

Jack C. H. Chung

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11/30/2009

Siemens Corporation
Intellectual Property Department
170 Wood Avenue South
Iselin, NJ 08830

EXAMINER

BOYCE, ANDRE D

ART UNIT

PAPER NUMBER

3623

MAIL DATE

DELIVERY MODE

11/30/2009

PAPER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JACK C. H. CHUNG, JIA-YI WANG,
and CHIEN-TAI WU

Appeal 2009-002338
Application 10/055,098
Technology Center 3600

Decided: November 30, 2009

Before MURRIEL E. CRAWFORD, ANTON W. FETTING, and BIBHU R.
MOHANTY, *Administrative Patent Judges*.

MOHANTY, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

The Appellants seek our review under 35 U.S.C. § 134 (2002) of the final rejection of claims 1-22 which are all the claims pending in the application. We have jurisdiction under 35 U.S.C. § 6(b) (2002).

SUMMARY OF THE DECISION

We REVERSE.

THE INVENTION

The Appellants' claimed invention is directed to an integrated decision support framework for collaborative development (Spec. 1:2-5). Different types of decision-drivers from numerous sources can be converted into a unified decision network including both mathematical and node-edge graph representations (Spec. 4:12-17). Claim 1, reproduced below, is representative of the subject matter of appeal.

1. A method for integrated decision support, comprising the steps of:
 - receiving a plurality of decision inputs;
 - converting a first plurality of said received decision inputs to a plurality of graph representations;
 - converting a second plurality of said received decision inputs to a plurality of mathematical representations;
 - decomposing said converted first plurality of said received decision inputs and said converted second plurality of said received decision inputs to a plurality of sub-problems;
 - detecting a plurality of strongly-connected components associated with said plurality of sub-problems, each of said plurality of strongly-connected components representing a connection between at least two of said plurality of sub-problems; and
 - solving said plurality of sub-problems.

THE REJECTIONS

The Examiner relies upon the following as evidence in support of the rejections:

Meystel	US 6,102,958	Aug. 15, 2000
Johnston	US 6,826,541 B1	Nov. 30, 2004

The following rejections are before us for review:

1. Claims 1-3, 5, 9, 11-14, 16, 20, and 22 are rejected under 35 U.S.C. § 102(b) as anticipated by Meystel.
2. Claims 4, 6-8, 10, 15, 17-19, and 21 are rejected under 35 U.S.C. § 103(a) as unpatentable over Meystel and Johnston.

THE ISSUE

At issue is whether the Appellants have shown that the Examiner erred in making the aforementioned rejections.

This issue turns on whether Meystel discloses “converting a first plurality of decision inputs to a plurality of graph representations” and then “decomposing said converted first plurality of said received decision inputs....to a plurality of sub-problems” as claimed.

FINDINGS OF FACT

We find the following enumerated findings of fact (FF) are supported at least by a preponderance of the evidence:¹

¹ See *Ethicon, Inc. v. Quigg*, 849 F.2d 1422, 1427 (Fed. Cir. 1988) (explaining the general evidentiary standard for proceedings before the Patent Office).

FF1. Meystel is directed to a multiresolutional decision support system (Title). The invention is related to a system that cannot be adequately described by a mathematical model and to optimizing the performance in an industrial facility (Col. 1:5-11).

FF2. Meystel discloses that the system determines optimal trajectories (input controls) using multiresolutional analysis of acquired data (Abstract).

FF3. Meystel at Col. 9:35-42 describes that the system 10 may be broken down into a plurality of subsystems, with each subsystem including one or more operational modules. A first organizational subsystem 20 acquires input information and organizes it for use by the modeling system 22. The modeling system 22 determines functional relationships of the organized data.

FF5. Meystel at Col. 9:35-42 does not disclose “converting a first plurality of decision inputs to a plurality of graph representations” and “decomposing said converted first plurality of said received decision inputs....to a plurality of sub-problems.”

FF6. Meystel in Fig. 1 shows data 16 from plant 14 entering the decision support system 10. Fig. 1 does not show “converting a first plurality of decision inputs to a plurality of graph representations” and “decomposing said converted first plurality of said received decision inputs....to a plurality of sub-problems.”

FF7. Meystel discloses at Col. 16:25-39 that the multiresolutional model may be validated by using a multi-valued graph representation.

PRINCIPLES OF LAW

Principles of Law Relating to Anticipation

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987). Analysis of whether a claim is patentable over the prior art under 35 U.S.C. § 102 begins with a determination of the scope of the claim.

Principles of Law Relating to Obviousness

“Section 103 forbids issuance of a patent when ‘the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.’” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level of skill in the art, and (4) where in evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). *See also KSR*, 550 U.S. at 407 (“While the sequence of these questions might be reordered in any particular case, the [*Graham*] factors continue to define the inquiry that controls.”) In *KSR*, the Supreme Court emphasized “the need for caution in granting a patent based on the combination of elements found in the prior art,” *id.* at 415-16.

ANALYSIS

The Appellants argue that the rejection of claim 1 is improper because Meystel does not disclose “*decomposing said converted first plurality of said received decision inputs* and said converted second plurality of said received decision inputs *to a plurality of sub-problems*” (Supp. Br. 24, emphasis added, and Reply Br. 5-6).

In contrast the Examiner has determined that Meystel discloses such a feature at Col. 9:35-42 (Ans. 3-4, 10). The Examiner has found that Meystel discloses that system 10 is broken down into a plurality of subsystems and organizes such information for use by a modeling system 22 which determines the functional relationships of the data and thus discloses the claimed feature.

We agree with the Appellants. Meystel is directed to a multiresolutional decision support system for a system that cannot be adequately described by a mathematical model and to optimizing the performance in an industrial facility (FF1). Claim 1 requires in part, as copied below:

“...*converting a first plurality of said received decision inputs to a plurality of graph representations;*
converting a second plurality of said received decision inputs to a plurality of mathematical representations;
decomposing said converted first plurality of said received decision inputs and said converted second plurality of said received decision inputs *to a plurality of sub-problems...*”.

Thus, the claim requires in part “converting a first plurality of decision inputs to a plurality of graph representations” and then “decomposing said converted first plurality of said received decision inputs....to a plurality of sub-problems.” The Examiner has asserted that

these limitations are found in Meystel at Col. 9:35-42 (Ans. 4, 11). In contrast we have determined that the citation of Meystel at Col. 9:35-42 does not disclose “converting a first plurality of decision inputs to a plurality of graph representations” and “decomposing said converted first plurality of said received decision inputs....to a plurality of sub-problems” (FF5). Note that the citation to Meystel at Col. 9:35-42 is silent with regard to any “graph representations.”

The Examiner has also stated that Meystel discloses “converting...decision inputs to...graph representations” at Col. 16:25-27 (Ans. 3-4). Meystel does disclose that the multiresolutional model may be validated by using a multi-valued graph representation (FF7) at Col. 16:25-39 but this is not a disclosure of “decomposing said converted first plurality of said received decision inputs....to a plurality of sub-problems” as required. Meystel in this section only validates the completed multiresolutional model using a multi-graph representation of some kind. There is further no specific disclosure of “*decomposing said converted first plurality of said received decision inputs* and said converted second plurality of said received decision inputs to *a plurality of sub-problems*” in the citation of 16:25-27 of Meystel. Further, Meystel at Col. 9:35-42 does not specifically disclose that when breaking down the system that “converting a first plurality of decision inputs to a plurality of graph representations” occurs (FF5, FF6) and it is unclear that the citation to multi-graph representation in Meystel at Col. 25-27 as cited by the Examiner is used in the same manner in the system. For these reasons the rejection of claim 1, and independent claims 11-12 and 22, which contain similar limitations is not sustained. Claims 2-10 and 13-21 depend from claims 1 and 12

respectively and the rejection of these claims is not sustained for these same reasons.

CONCLUSIONS OF LAW

We conclude that Appellants have shown that the Examiner erred in rejecting claims 1-3, 5, 9, 11-14, 16, 20, and 22 under 35 U.S.C. § 102(b) as anticipated by Meystel.

We conclude that Appellants have shown that the Examiner erred in rejecting claims 4, 6-8, 10, 15, 17-19, and 21 under 35 U.S.C. § 103(a) as unpatentable over Meystel and Johnston.

DECISION

The Examiner's rejection of claims 1-22 is reversed.

REVERSED

JRG

Siemens Corporation
Intellectual Property Department
170 Wood Avenue South
Iselin NJ, 08830